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IN THE CLAIMS:

1. (Currently amended) A method of etching a dielectric structure comprising:

providing a dielectric structure comprising (a) a first dielectric layer of undoped silicon oxide or F-doped silicon oxide; and (b) a second dielectric layer of C,H-doped silicon oxide over said first dielectric layer; and

etching said dielectric structure in a plasma-etching step, wherein said plasma-etching step is conducted using a plasma source gas that comprises nitrogen atoms and fluorine atoms, and wherein said second dielectric layer is selectively etched relative to said first dielectric layer in said etching step, thereby avoiding the need for an intervening etch stop layer between said first and second dielectric layers.

2. (Previously presented) The method of claim 1, wherein said plasma source gas comprises a gaseous species that comprises one or more nitrogen atoms and one or more fluorine atoms.

3. (Original) The method of claim 2, wherein the gaseous species is NF_3.

4. (Original) The method of claim 1, wherein said plasma source gas comprises (a) a gaseous species that comprises one or more nitrogen atoms and (b) a gaseous species that comprises one or more fluorine atoms.

5. (Original) The method of claim 4, wherein said plasma source gas comprises N_2 and a fluorocarbon gas.

6. (Original) The method of claim 5, wherein said fluorocarbon gas is CF_4.

7. (Original) The method of claim 1, wherein said first dielectric layer is an undoped silicon dioxide layer.

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8. (Original) The method of claim 1, wherein said first dielectric layer is a fluorinated silica glass layer.

9. (Original) The method of claim 1, wherein said plasma-etching step provides a second-dielectric-layer:first-dielectric-layer selectivity of 2.5:1 or greater.

10. (Original) The method of claim 1, wherein said plasma-etching step provides a second-dielectric-layer:first-dielectric-layer selectivity of 3:1 or greater.

11. (Original) The method of claim 1, wherein said plasma-etching step is conducted within a magnetically enhanced reactive ion etching system.

12. (Previously presented) A method of etching a trench in a dual damascene structure, said method comprising:

providing a dual damascene structure comprising (a) an underlying layer, (b) a via dielectric layer of undoped silicon oxide or F-doped silicon oxide over said underlying layer, (c) a trench dielectric layer of C,H-doped silicon oxide over said via dielectric layer, and (d) a patterned masking layer over said trench dielectric layer; and

etching one or more trenches in said trench dielectric layer through apertures in said patterned masking layer in a plasma-etching step until a portion of an upper surface of said via dielectric layer is exposed, wherein said plasma-etching step is conducted using a plasma source gas that comprises nitrogen atoms and fluorine atoms and wherein said trench dielectric layer is selectively etched relative to said via dielectric layer in said plasma-etching step.

13. (Original) The method of claim 12, wherein said dual damascene structure comprises an extended via hole that extends through said trench dielectric layer and said via dielectric layer.

14. (Previously presented) The method of claim 12, wherein said plasma source gas comprises a gaseous species that comprises at least one nitrogen atom and at least one fluorine atom.

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15. (Original) The method of claim 14, wherein the gaseous species is NF_3.

16. (Original) The method of claim 12, wherein said plasma source gas comprises: (a) a gaseous species that comprises one or more nitrogen atoms and (b) a gaseous species that comprises one or more fluorine atoms.

17. (Original) The method of claim 16, wherein said plasma source gas comprises N_2 gas and a fluorocarbon gas.

18. (Original) The method of claim 12, wherein said via dielectric layer is an undoped silicon dioxide layer.

19. (Original) The method of claim 12, wherein said via dielectric layer is a fluorinated silica glass layer.

20. (Original) The method of claim 12, wherein said plasma-etching step provides a trench-dielectric-layer:via-dielectric-layer selectivity of 3:1 or greater.

21. (Original) The method of claim 12, wherein said plasma-etching step is conducted within a magnetically enhanced reactive ion etching system.

22. (Previously presented) The method of claim 1, wherein said second dielectric layer of C,H-doped silicon oxide is formed using a plasma-assisted chemical vapor deposition process.

23. (Previously presented) The method of claim 12, wherein said trench dielectric layer of C,H-doped silicon oxide layer is formed using plasma-assisted chemical vapor deposition process.

24. (New) The method of claim 1, wherein said trench dielectric layer of C,H-doped silicon oxide layer is formed using plasma-assisted chemical vapor deposition process.